

# Packard Bell

## *EasyNote ST*

### Disassembly Manual



Packard Bell

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## **About this Guide**

This guide contains systematic disassembly instructions for the Packard Bell EasyNote ST. The instructions are illustrated where necessary with images of the part that is being disassembled.

Packard Bell B.V. reserves the right to make changes to the EasyNote ST without notice.

## **For More Information**

For more information about the Packard Bell EasyNote ST, visit Packard Bell's support web site at [www.packardbell.com](http://www.packardbell.com). The support web site also has links to additional Packard Bell documentation and detailed product specifications.

## **Technician Notes**

Only technicians authorized by Packard Bell B.V. should attempt to repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module level repair. Because of the complexity of the individual boards and subassemblies, no one should attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard. Any indication of component replacement or printed wiring board modifications may void any warranty or exchange allowances.

## **Disassembly**

When disassembling the system unit, follow these general rules:

- Turn OFF the power to the system and all peripherals using the power button.
- Unplug the AC adapter and all power and signal cables from the system.
- Remove any SD/MMC card, ExpressCard or dummy card from the computer.
- Do not disassemble the system into parts that are smaller than those specified in the instructions.
- Label all removed connectors; note where the connector goes and in what position it was installed.
- The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatch when putting back the components.

## **Reassembly**

Reassembly is the reverse of the disassembly process. Use care to ensure that all cables and screws are returned to their proper positions. Check that no tools or any loose parts have been left inside the casing. Check that everything is properly installed and tightened.

## **Required Tools**

To disassemble the computer, you need the following tools:

- Wrist grounding strap and conductive mat for preventing electrostatic discharge.
- Small Phillips screwdriver.
- Small flat screwdriver.

## **Hazardous Voltage**

There is hazardous voltage present inside the notebook when it is connected to an AC supply, even when the notebook's power switch is off. Exposure to hazardous voltage could cause personal injury. To avoid risk of injury, contact an Authorized Service Provider for proper (un)installation of optional hardware devices.

## **Avoid Electrostatic Discharge**

Electrostatic electricity can easily damage circuit cards and integrated circuits (ICs). To reduce risk of damage, store them in protective packaging whenever they are not installed in the system.

Add-in cards can be extremely sensitive to ESD and always require careful handling. After removing the card from the notebook, place the card flat on a grounded, static-free surface, component-side up. Use a conductive foam pad if available, but not the card wrapper. Do not slide the card over any surface.

Before you install or remove memory modules, video memory, disk drives, circuit cards or other devices, protect them from static electricity. To do so, make sure the notebook's power switch is OFF. Then, unplug the notebook's AC power cord. Before picking up the device you (un)install, you should wear an anti-static wrist wrap (available at electronic supply stores). Be sure to connect the wrist wrap to an unpainted metal portion of the notebook casing. As an alternative, you can dissipate electrostatic build-up by touching an unpainted metal portion of the notebook casing with one hand. Then touch the device you are (un)installing with the other hand, and maintain continuous contact with it until it is (un)installed in the notebook.

## **Power Supply Unit**

Under no circumstances should you attempt to disassemble the power supply. The power supply contains no user-serviceable parts. Inside the power supply are hazardous voltages that can cause serious personal injury. Always return a defective power supply to the dealer.

### **WARNING**

Ensure that the notebook is disconnected from its power source and from all telecommunications links, networks, or modem lines whenever the casing cover is removed. Do not operate the notebook with the cover removed.

### **AVERTISSEMENT**

Assurez-vous que le système est débranché de son alimentation ainsi que de toutes les liaisons de télécommunication, des réseaux, et des lignes de modem avant d'enlever le capot. Ne pas utiliser le système quand le capot est enlevé.

### **WARNUNG**

Das System darf weder an eine Stromquelle angeschlossen sein noch eine Verbindung mit einer Telekommunikationseinrichtung, einem Netzwerk oder einer Modem-Leitung haben, wenn die Gehäuseabdeckung entfernt wird. Nehmen Sie das System nicht ohne die Abdeckung in Betrieb.

### **ADVERTENCIA**

Asegúrese de que cada vez que se quite la cubierta del portátil, el sistema haya sido desconectado de la red de alimentación y de todos los enlaces de telecomunicaciones, de red y de líneas de módem. No ponga en funcionamiento el sistema mientras la cubierta esté quitada.

### **WAARSCHUWING**

Zorg er voor dat alle verbindingen van en naar de notebook (stroom, modem, netwerk, etc) verbroken worden voordat de behuizing geopend wordt. Zet de notebook nooit aan als de behuizing geopend is.

### **AVVERTENZA**

Prima di rimuovere il coperchio del telaio, assicurarsi che il sistema sia scollegato dall'alimentazione, da tutti i collegamenti di comunicazione, reti o linee di modem. Non avviare il sistema senza aver prima messo a posto il coperchio.

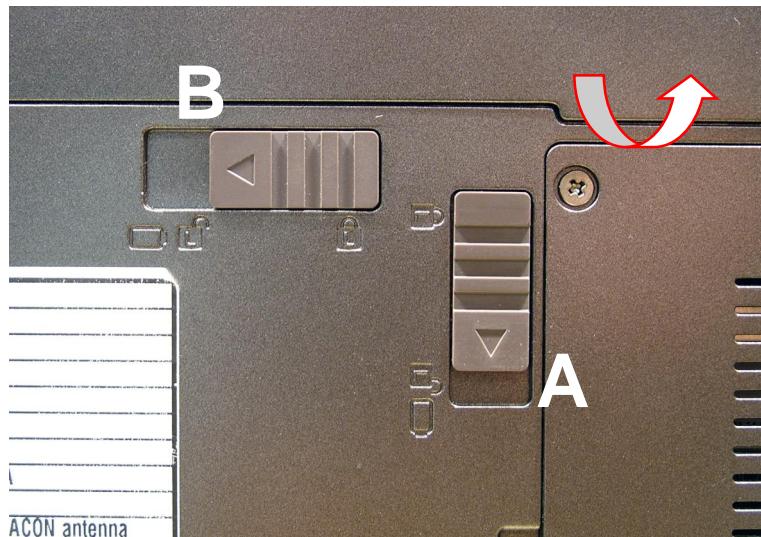
## Battery

Perform the following steps to remove the battery:

1. Make sure the power is off.
2. Turn the notebook upside down.

**Note:** Use an anti-static mat or something soft like a piece of cloth underneath the notebook to prevent damage to the exterior of the notebook.

3. Slide the battery lock/unlock latch (A) to the unlock position.



*Fig. 1 Removing the battery.*

4. Slide the battery release latch (B) to the release position (see [Fig. 1](#) on page 4).
5. Lift the battery upwards; there are three tabs holding the battery in place at the back.
6. Take the battery out of the compartment (see [Fig. 1](#) on page 4).

## Hard Disk Drives

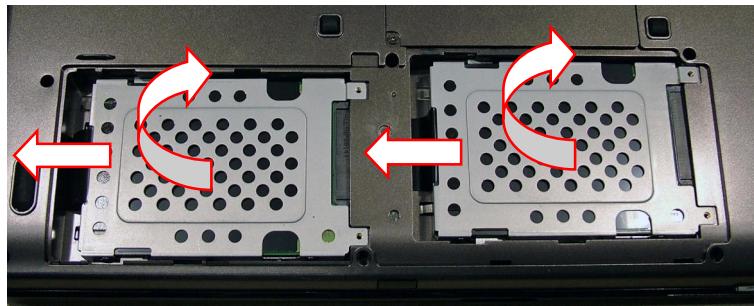
To remove the left hard disk drive, first remove the battery (see [Battery](#) on page 4) and then perform the following steps:

1. Remove the four screws securing the hard disk drives compartment cover.



*Fig. 2 Removing hard disk drive compartment cover.*

2. Lift the cover upwards from the back. There are four tabs holding the cover in place on the front. Raise the cover until you can remove it from the casing (see [Fig. 2](#) on page 4).
3. Pull the plastic tab on the hard disk drives towards the left to disconnect the drives.



*Fig. 3 Disconnecting and removing hard disk drive.*

4. Take the drives out of the compartment (see [Fig.3](#) on page 5).
5. Remove the four screws (Phillips-head) on the metal brackets to separate them from the hard disk drives.

**Note:** The drive bays in the compartment are not labelled, so you cannot see which hard disk drive the BIOS considers the first disk.

## Memory

To remove the memory installed, first remove the battery (see [Battery](#) on page 4) and then perform the following steps:

1. Remove the two screws securing the memory compartment cover.



*Fig. 4 Removing memory compartment cover.*

2. Lift the cover upwards from the left. There are two tabs holding the cover in place on the right. Raise the cover until you can remove it from the casing (see [Fig. 4](#) on page 5).

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3. Release the clip on each side securing the memory module; the module will eject upwards.



*Fig. 5 Removing memory module.*

4. Carefully remove the memory module from the socket.

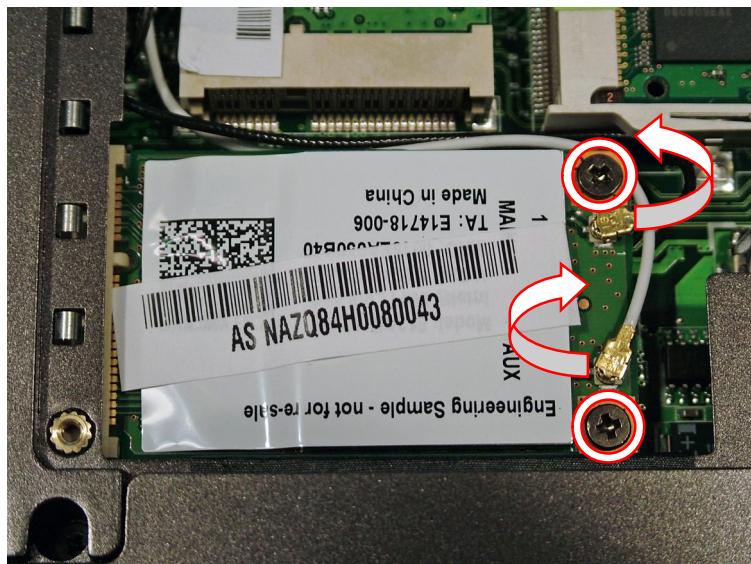
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**Note:** In case two memory modules have been installed, you have to remove the top module first before you can remove the one underneath.

## Wireless LAN Adapter

To remove the wireless LAN adapter (mini PCI Express), first remove the battery (see [Battery](#) on page 4) and then perform the following steps:

1. Remove the two screws securing the memory compartment cover (see [Fig. 4](#) on page 5).
2. Lift the cover upwards from the left. There are two tabs holding the cover in place on the right. Raise the cover until you can remove it from the casing (see [Fig. 4](#) on page 5).
3. Carefully disconnect the two WiFi antenna cables.



*Fig. 6 Location of WiFi antenna cable connectors and screws.*

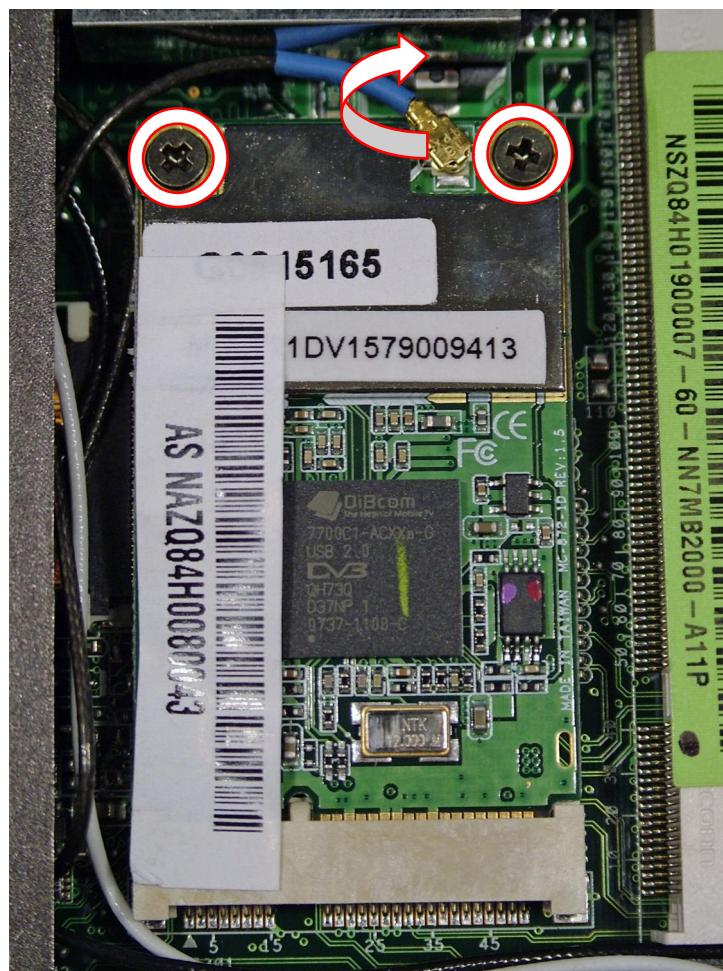
**Note:** There are two WiFi antenna cables connected to the wireless LAN adapter. The black WiFi antenna cable is connected to MAIN (1) connector and the white WiFi antenna cable is connected to AUX (2) connector.

4. Remove the screw securing the wireless LAN adapter; it will eject upwards (see [Fig. 6](#) on page 6).
5. Take out the wireless LAN adapter from the socket.

## TV Tuner (Optional)

To remove the optional TV tuner (mini PCI Express), first remove the battery (see [Battery](#) on page 4), and then perform the following steps:

1. Remove the two screws securing the memory compartment cover (see [Fig. 4](#) on page 5).
2. Lift the cover upwards from the left. There are two tabs holding the cover in place on the right. Raise the cover until you can remove it from the casing (see [Fig. 4](#) on page 5).
3. Carefully disconnect the TV antenna cable.



*Fig. 7 Location of antenna cable connector and screw.*

4. Remove the screw securing the TV tuner (see [Fig. 7](#) on page 7); the card will eject upwards.
5. Take out the TV tuner card from the socket.

**Note:** The EasyNote ST has either a TV tuner card installed or the Intel Turbo memory, not both.

## Intel Turbo Memory (Optional)

To remove the optional Intel Turbo Memory module (mini PCI Express), first remove the battery (see [Battery](#) on page 4), and then perform the following steps:

1. Remove the two screws securing the memory compartment cover (see [Fig. 4](#) on page 5).
2. Lift the cover upwards from the left. There are two tabs holding the cover in place on the right. Raise the cover until you can remove it from the casing (see [Fig. 4](#) on page 5).
3. Remove the two screws securing the Intel Turbo Memory module; the card will eject upwards.
4. Take out the Intel Turbo Memory module from the socket.

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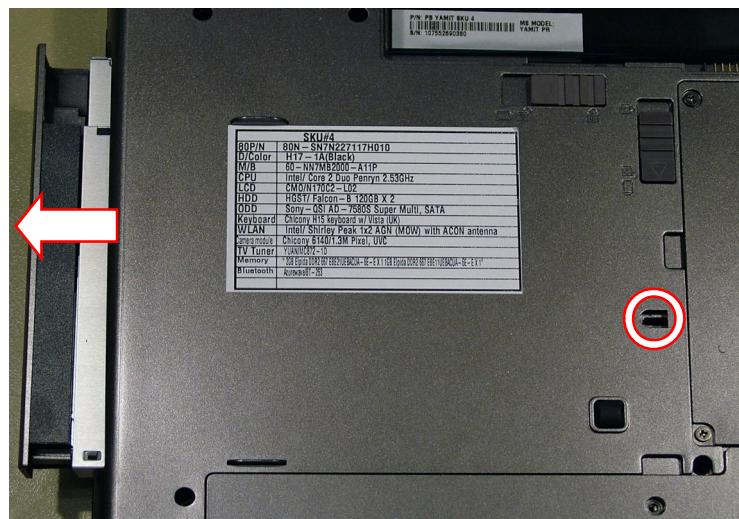
**Note:** The EasyNote ST has either a TV tuner card installed or the Intel Turbo memory, not both.

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## Optical Disk Drive

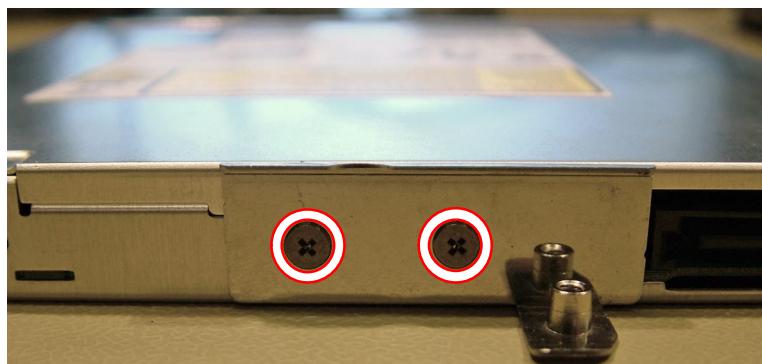
To remove the optical disk drive, first remove the battery (see [Battery](#) on page 4) and then perform the following steps:

1. Remove the screw securing the optical disk drive.



*Fig. 8 Location screw securing optical disk drive.*

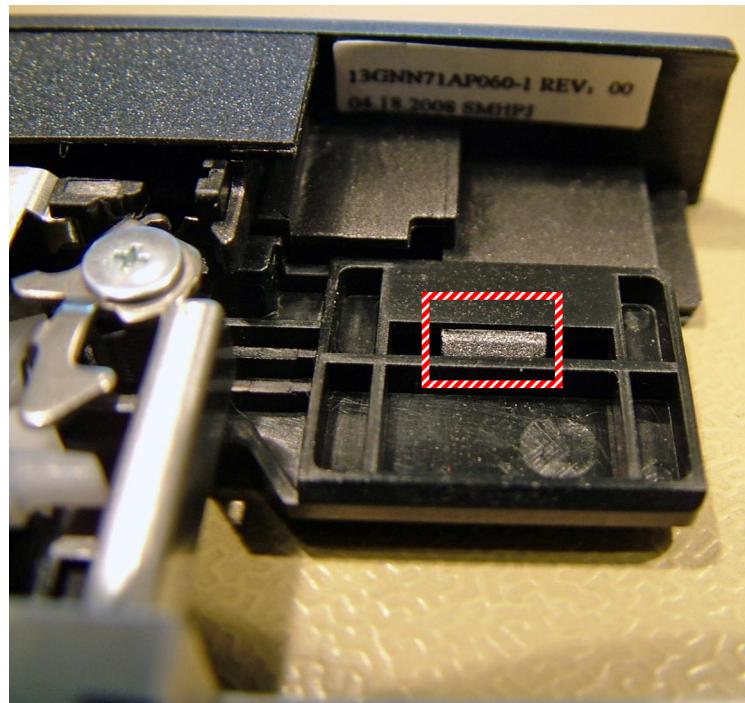
2. Use the emergency eject hole to open the optical disk drive.
3. Pull the tray and take out the optical disk drive from the drive bay (see [Fig. 8](#) on page 8).
4. Remove the two screws securing the metal bracket and remove it from the drive.



*Fig. 9 Removing metal bracket.*

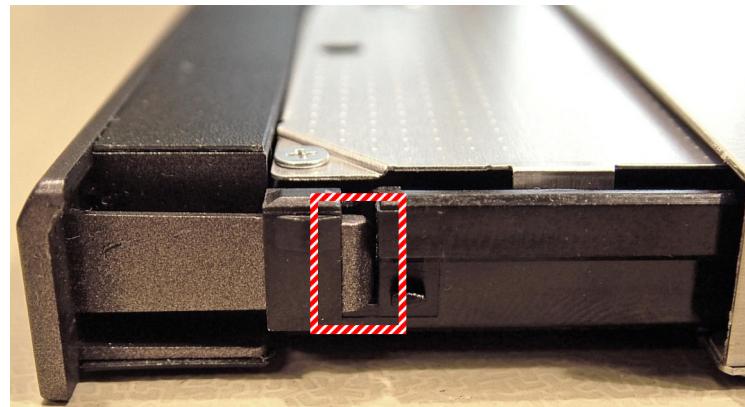
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5. Insert the flat screwdriver into the notch at the underside of the tray to release the tray bezel lock.



*Fig. 10 Location tray bezel lock underside.*

6. Insert the small flat screwdriver into the notch at the side of the tray to release the side lock.



*Fig. 11 Location tray bezel side lock.*

7. Separate the tray bezel from the drive.

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**Note:** The tray bezel is a delicate part, use care when handling it.

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## Keyboard

To remove the keyboard, first remove the battery (see [Battery](#) on page 4) and then perform the following steps:

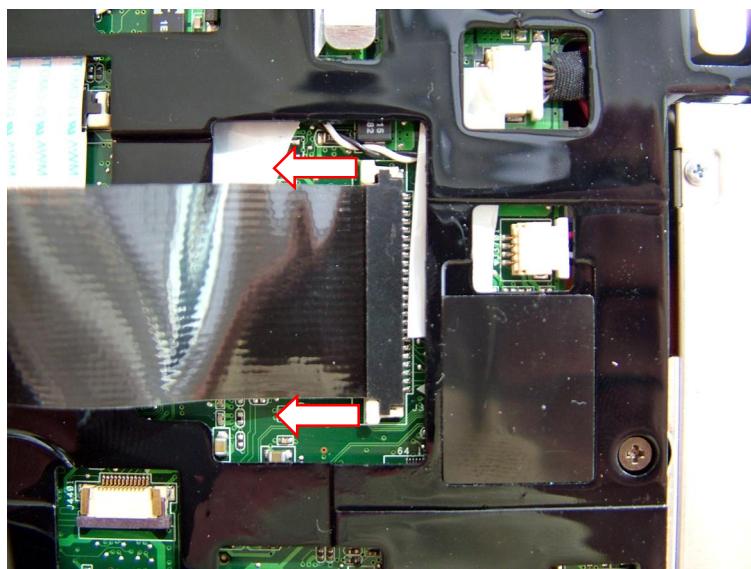
1. Turn the notebook over so the top is facing up and open the LCD completely.

2. Release the keyboard by prying it up along the top side of the keyboard. There are five tabs holding the keyboard in place on the front, particularly at the following keys: <Esc>, <F5>, <F10>, <Pause> and <\*>.



*Fig. 12 Removing keyboard.*

3. Tilt the keyboard gently forward and let it rest upside down on the touchpad.
4. Before removing the keyboard entirely, carefully release the white clip securing the flat cable and disconnect the cable from the main board.



*Fig. 13 Releasing keyboard flat cable.*

## Keyboard Cover

To remove the keyboard cover, first remove the battery (see [Battery](#) on page 4) and then perform the following steps:

1. Remove the nine screws securing the keyboard cover. Note that three screws are located in the battery compartment.



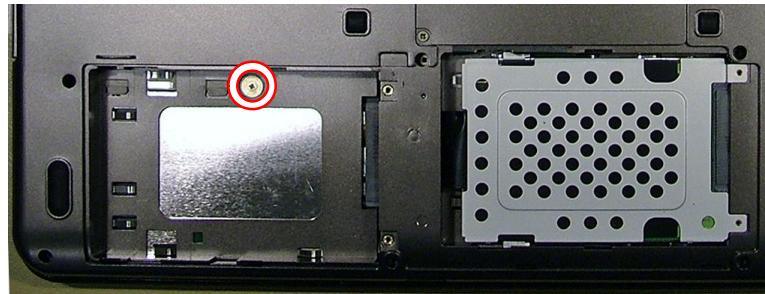
*Fig. 14 Location keyboard cover screws.*

2. Turn the notebook over so the top is facing up and open the LCD completely.
3. Release the cover by prying it up along the top side of the cover.
4. Tilt the cover gently forward; there are six tabs holding the cover in place on the front.

## Top Cover

To remove the top cover, remove the battery (see [Battery](#) on page 4), remove the left hard disk drive (see [Hard Disk Drives](#) on page 4), remove the keyboard (see [Keyboard](#) on page 9), remove the keyboard cover (see [Keyboard Cover](#) on page 10), and then perform the following steps:

1. Remove the screw in the left hard disk drive bay.



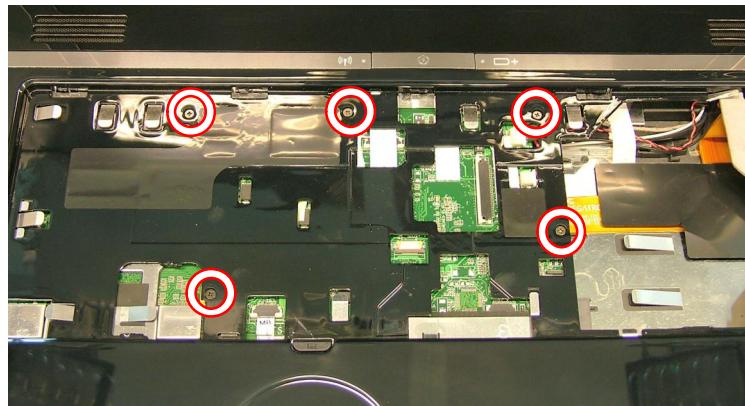
*Fig. 15 Location of touchpad connector.*

2. Remove the 9 screws from the bottom base.



*Fig. 16 Location bottom base screws.*

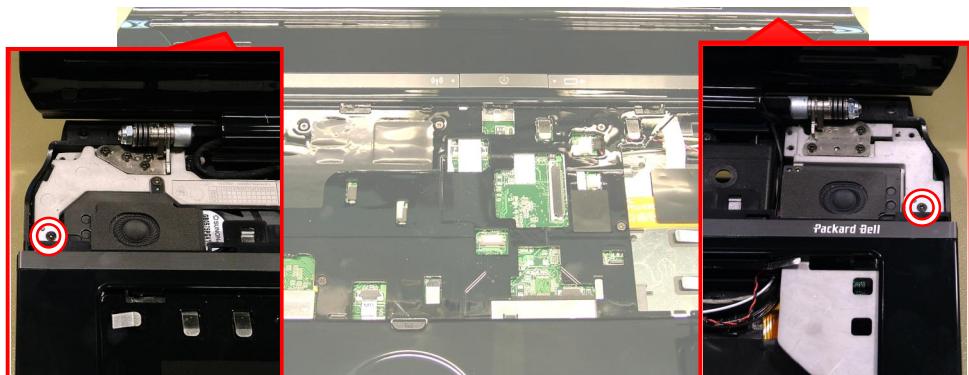
3. Turn the notebook over so the top is facing up and remove the five screws securing the top cover.



**Fig. 17 Location of cover screws in keyboard compartment.**

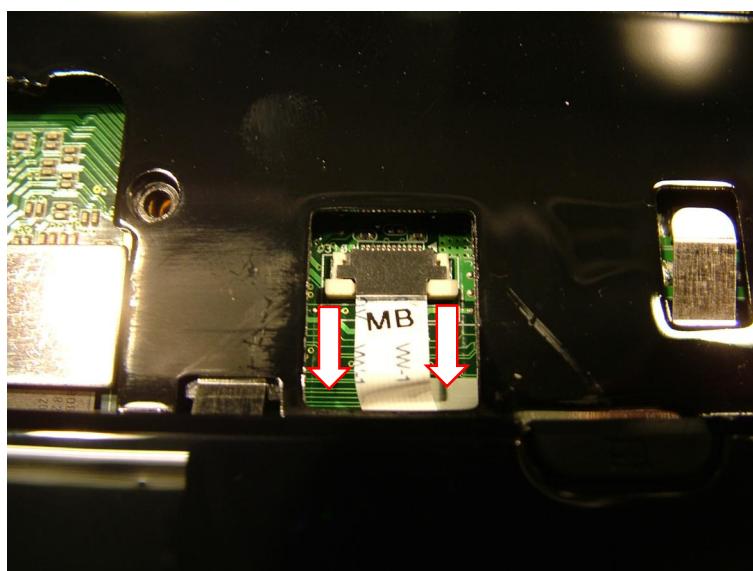
**Note:** The screw nearest to the optical drive is shorter than the other four.

4. Remove the two screws securing the top cover underneath the keyboard cover.



**Fig. 18 Location screws underneath keyboard cover.**

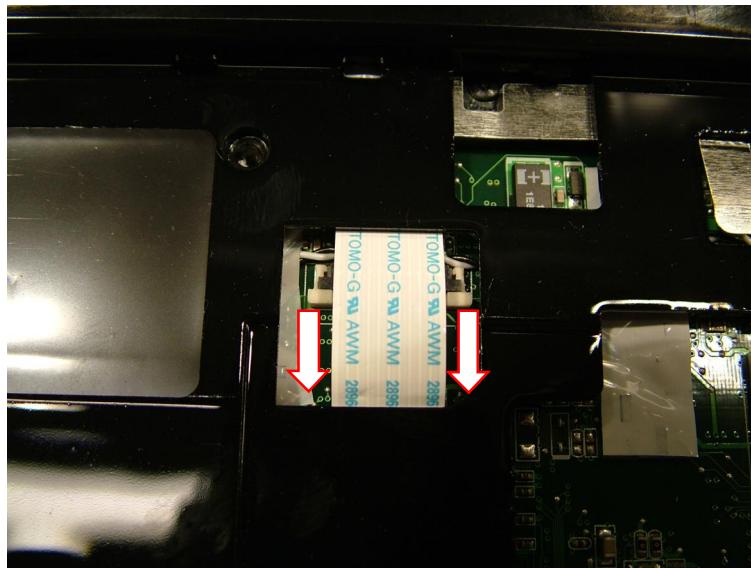
5. Release the white clip securing the touchpad flat cable and disconnect the cable.



**Fig. 19 Disconnecting touchpad flat cable.**

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6. Release the white clip securing the button board flat cable and disconnect the cable.



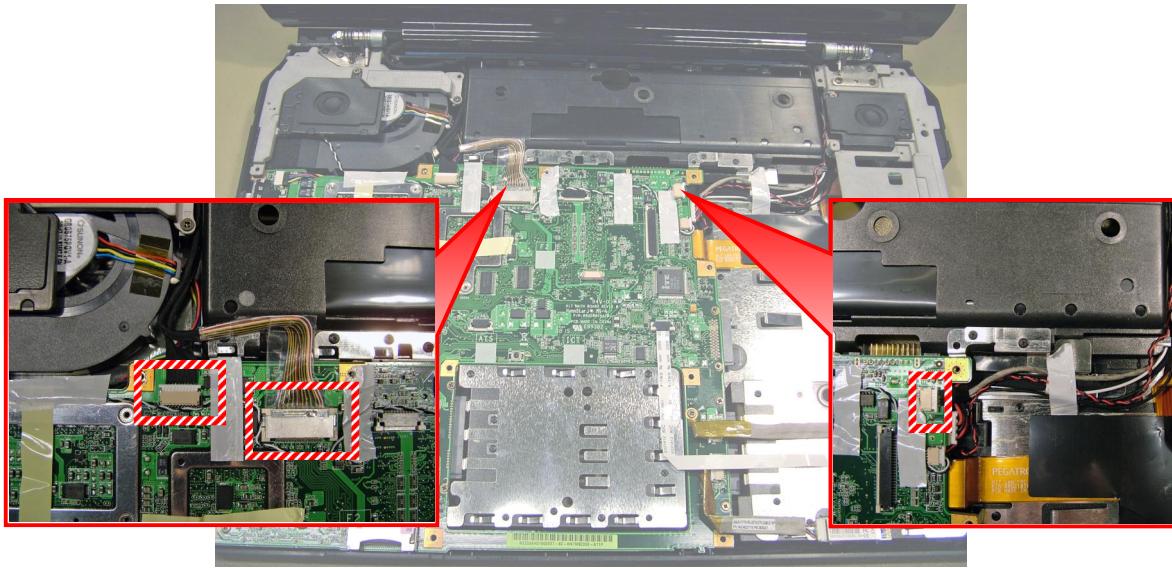
**Fig. 20** Disconnecting button board flat cable.

7. Remove the top cover.

## LCD Assembly

To disassemble the LCD assembly, first disconnect the WiFi antenna cables from the wireless LAN adapter (see steps 1 to 3 in [Wireless LAN Adapter](#) on page 6), remove the top cover (see [Top Cover](#) on page 11), and then perform the following steps:

1. Disconnect the three LCD cables from the headers on the main board.

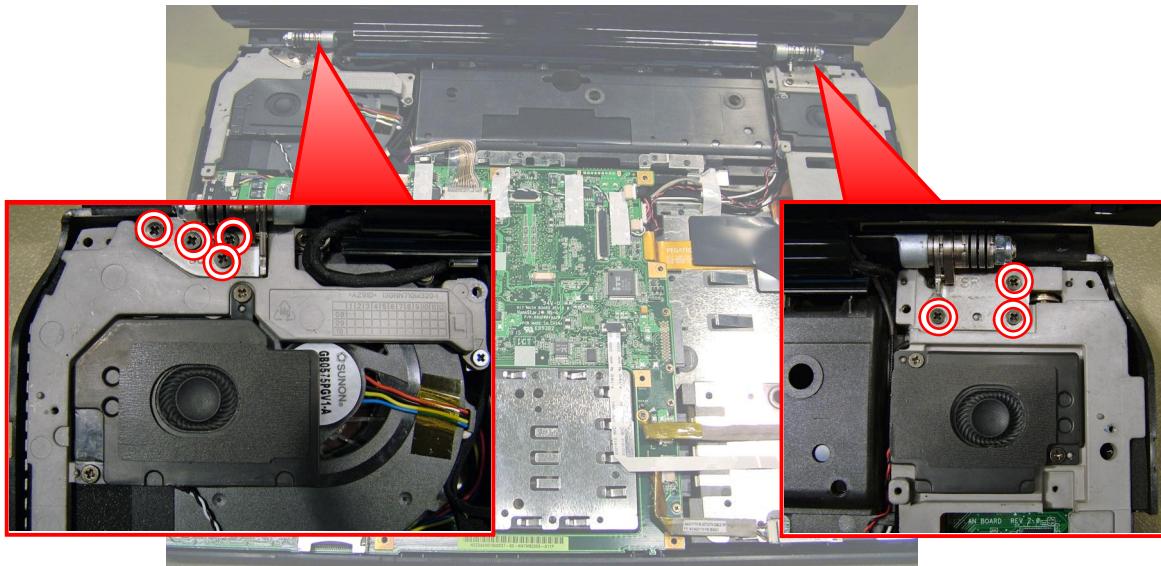


**Fig. 21** Location LCD cables.

2. Clear the WiFi antenna cable.
3. Open the LCD into an angle of approximately 90 degree.

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4. Remove the screws securing the hinges.



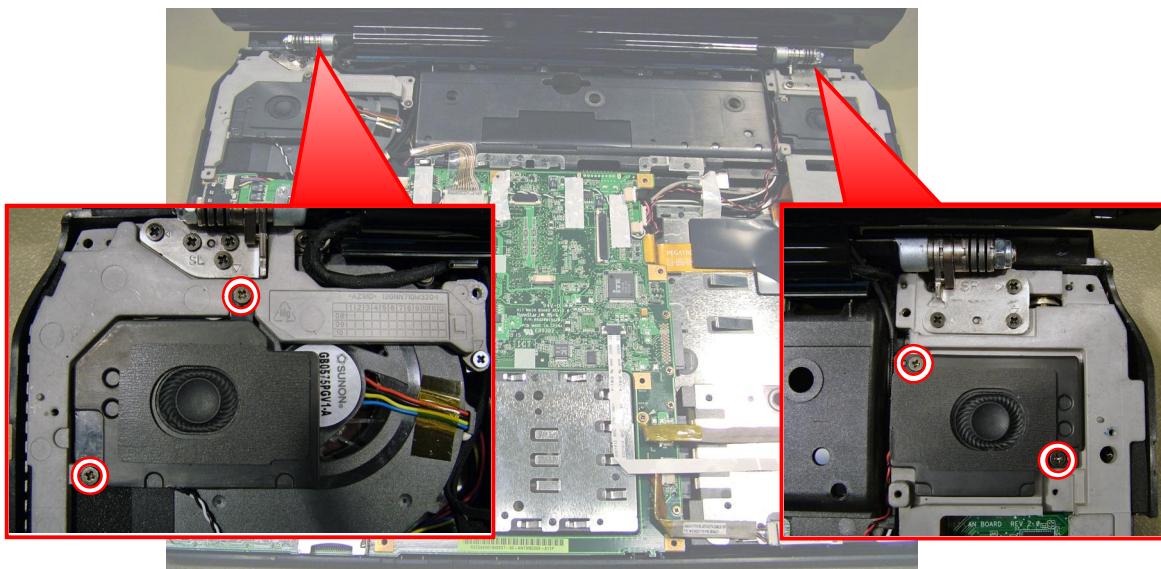
*Fig. 22 Location LCD hinge screws.*

5. Lift out the LCD assembly.

## Speakers

To remove the speakers, first remove the top cover (see [Top Cover](#) on page 11), and then perform the following steps:

1. Remove the screws securing the speakers to the casing.

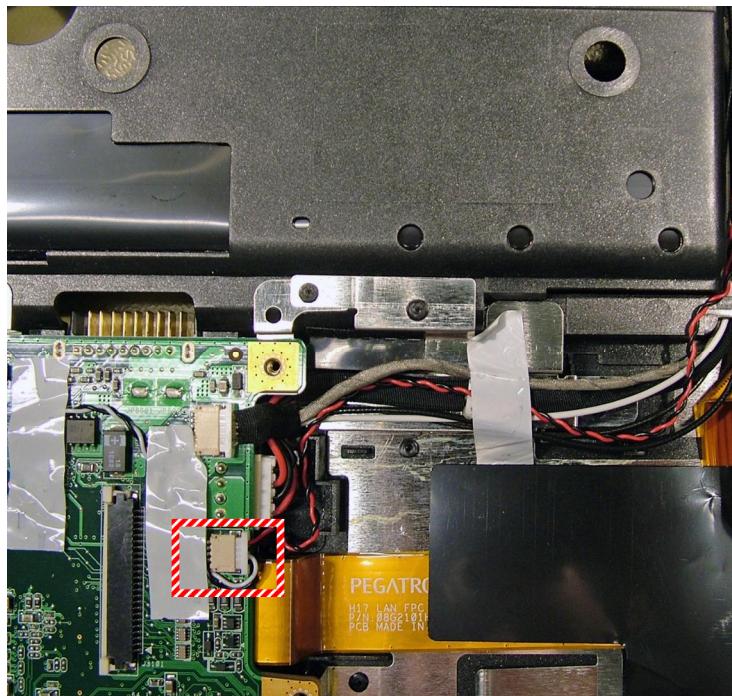


*Fig. 23 Location speaker screws.*

2. Clear the speaker cables: detach any adhesive tape securing the speaker cables to the main board.

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3. Disconnect the speaker cables from the header on the main board.



*Fig. 24 Location of speaker cable header on the main board.*

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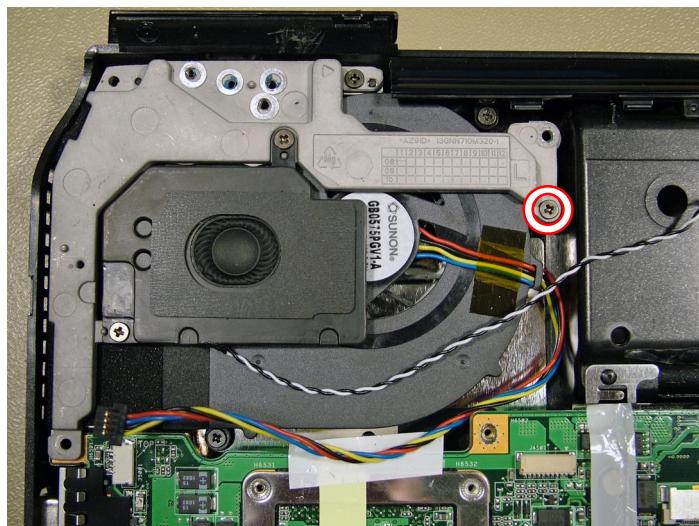
**Note:** The left and right speaker assembly share the same header on the main board.

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## Main Board

To remove the main board, remove the hard disk drives (see [Hard Disk Drives](#) on page 4), remove the memory (see [Memory](#) on page 5), remove the wireless LAN adapter (see [Wireless LAN Adapter](#) on page 6), remove either the TV tuner card (see [TV Tuner \(Optional\)](#) on page 7) or the Intel Turbo Memory module (see [Intel Turbo Memory \(Optional\)](#) on page 8), remove the CD/DVD drive (see [Optical Disk Drive](#) on page 8), remove the LCD assembly (see [LCD Assembly](#) on page 13), and then perform the following steps:

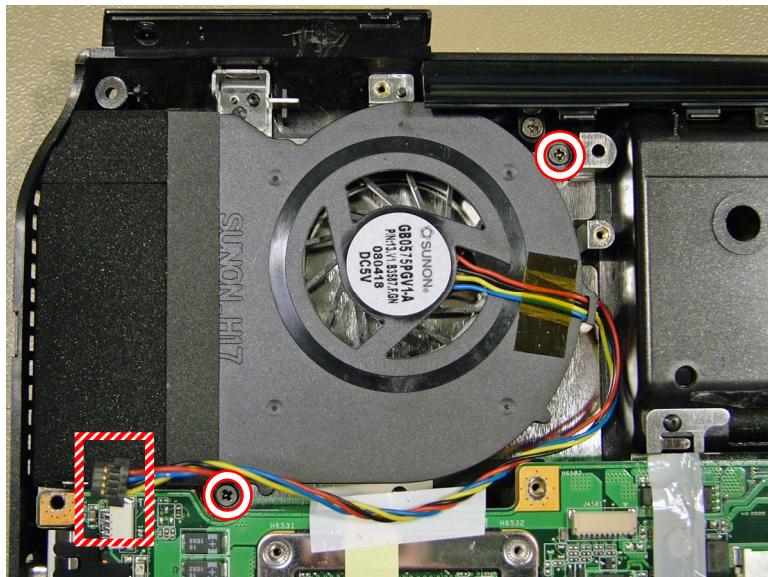
1. Remove the screw securing the bracket that holds the left speaker and take out the bracket.



*Fig. 25 Location of left speaker bracket screw.*

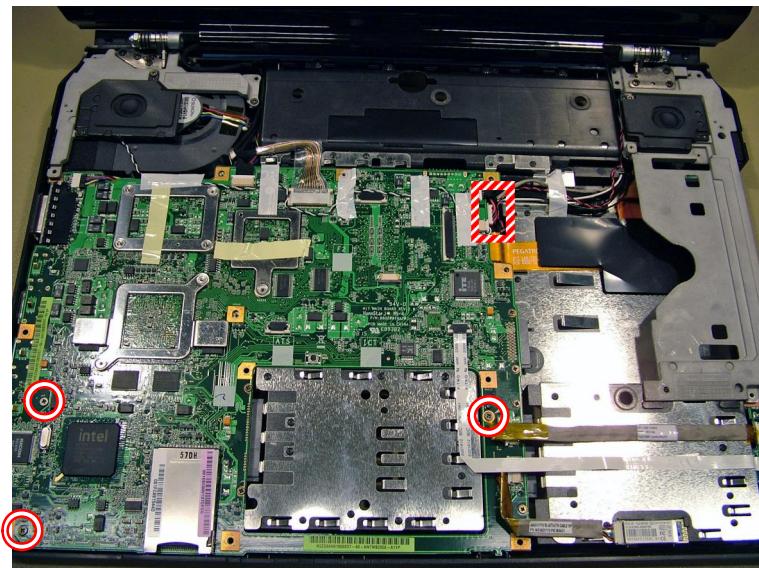
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2. Carefully disconnect the power cable from the header on the main board.



*Fig. 26 Location of cooler cable and screws.*

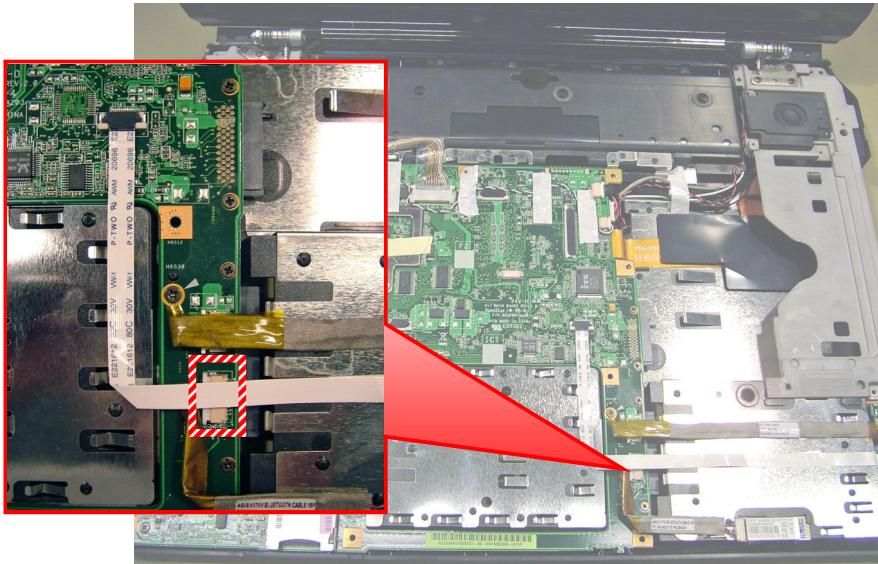
3. Remove the two screws securing the cooler (see [Fig. 26](#) on page 16).
4. Remove the DC jack cable from the header on the main board.



*Fig. 27 Location of main board screws and DC jack header.*

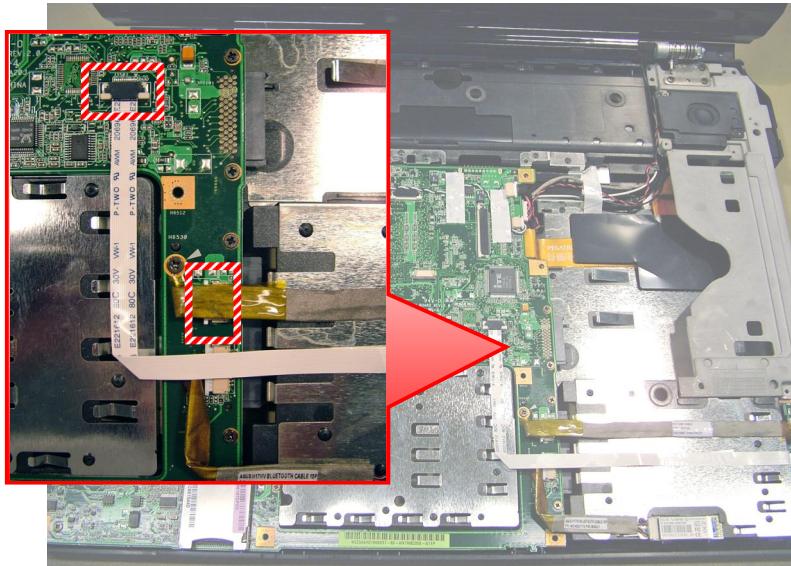
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5. Disconnect the optional Bluetooth cable from the header on the main board.



*Fig. 28 Disconnecting optional Bluetooth cable.*

6. Release the white clip securing the USB board cable and disconnect the audio board cable from the headers on the main board.



*Fig. 29 Disconnecting USB board and audio board cables.*

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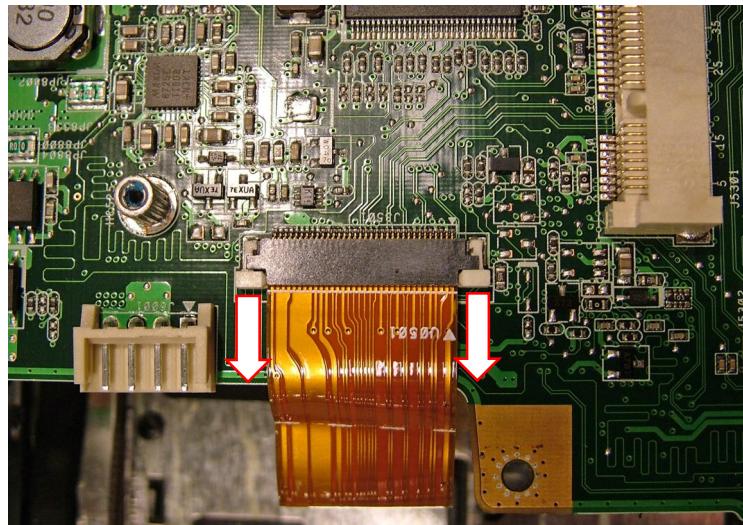
**Note:** On Fig. 29, one of the headers is partly covered by the flat cable.

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7. Remove the three screws securing the main board (see [Fig. 27](#) on page 16).
8. Carefully slide the main board a bit to the right to free the DVI connector and tilt the main board from the left.

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9. Before removing the main board entirely, carefully release the white clip securing the Ethernet/USB board flat cable and disconnect the cable from the main board.



*Fig. 30 Location of Ethernet/USB flat cable.*

10. Lift the main board out of the casing.

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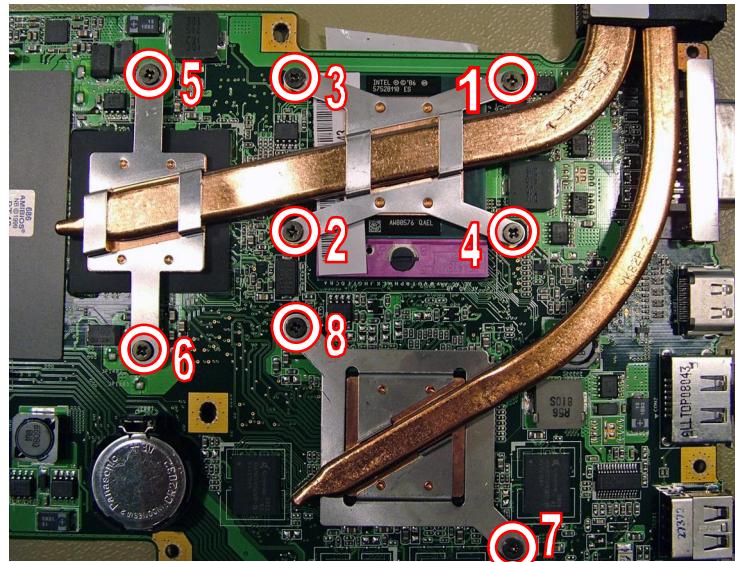
**Note:** Optionally, you can disconnect the other end of the flat cable from the switch board.

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## CPU and Heat Sink

To remove the CPU and the heat sink, first remove the main board (see [Main Board](#) on page 15) and then perform the following steps:

1. Turn the eight screws securing the heat sink halfway loose in designated order.

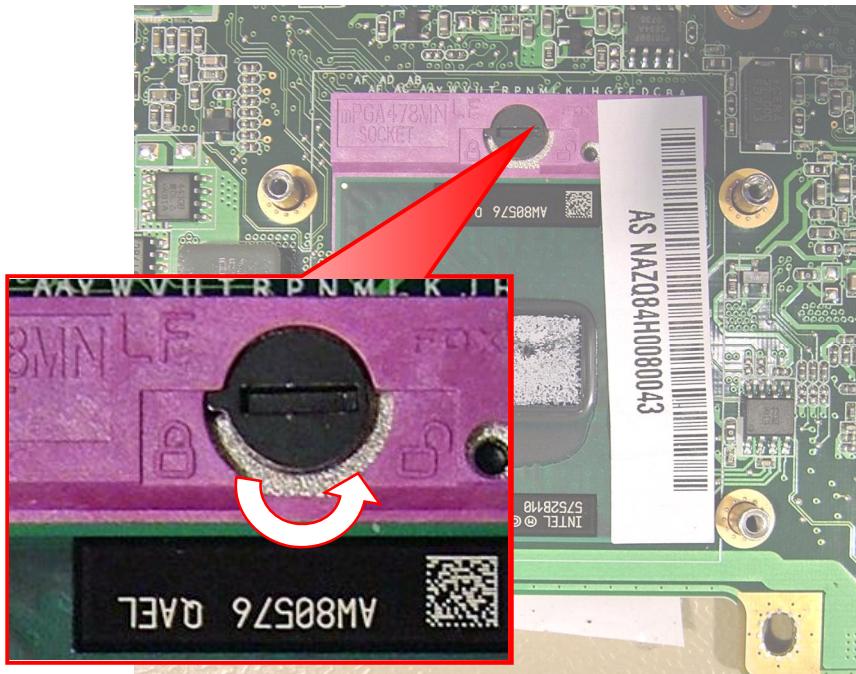


*Fig. 31 Location of CPU heat sink screws.*

2. Now turn the screws completely loose, again in designated order, and remove them (see [Fig. 31](#) on page 18).
3. Carefully remove the heat sink.

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4. Turn the screw in the CPU into the unlock position to release the CPU.



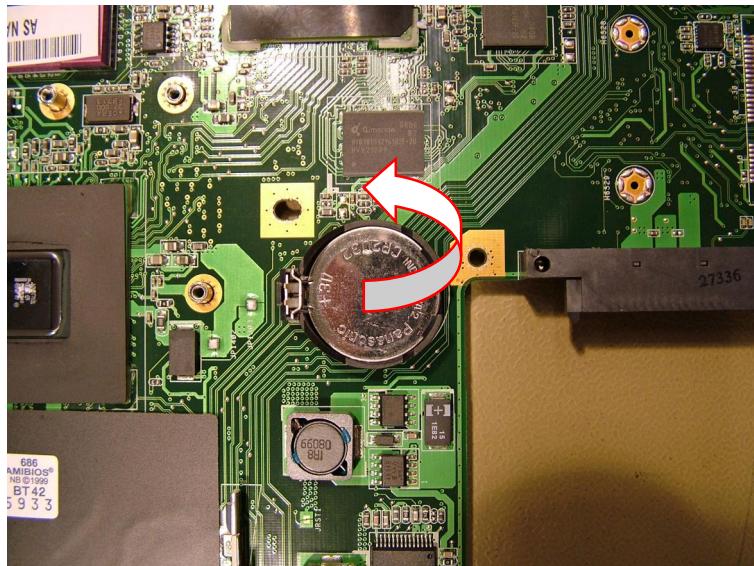
*Fig. 32 Location of screw securing CPU.*

5. Carefully take out the CPU from the socket.

## CMOS Battery

To remove the CMOS battery, first remove the main board (see [Main Board](#) on page 15), and then perform the following steps:

1. Release the CMOS battery and take it from the socket on the main board.



*Fig. 33 Removing CMOS battery.*

## Bluetooth (Optional)

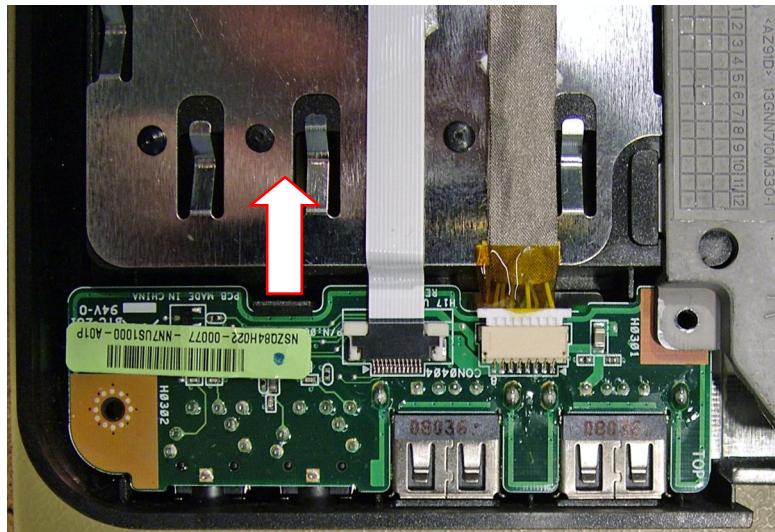
To remove the optional Bluetooth module, first remove the top cover (see [Top Cover](#) on page 11), and then perform the following steps:

1. Disconnect the Bluetooth cable from the header on the main board (see [Fig. 28](#) on page 17).
2. Carefully remove the Bluetooth module from the casing.

## USB/Audio Board

To remove the USB/audio board, first remove the top cover (see [Top Cover](#) on page 11), and then do the following:

1. Release the white clip securing the USB board cable and disconnect the audio board cable from the headers on the main board (see [Fig. 29](#) on page 17).
2. Release the black tab securing the board.



*Fig. 34 Releasing the USB/audio board.*

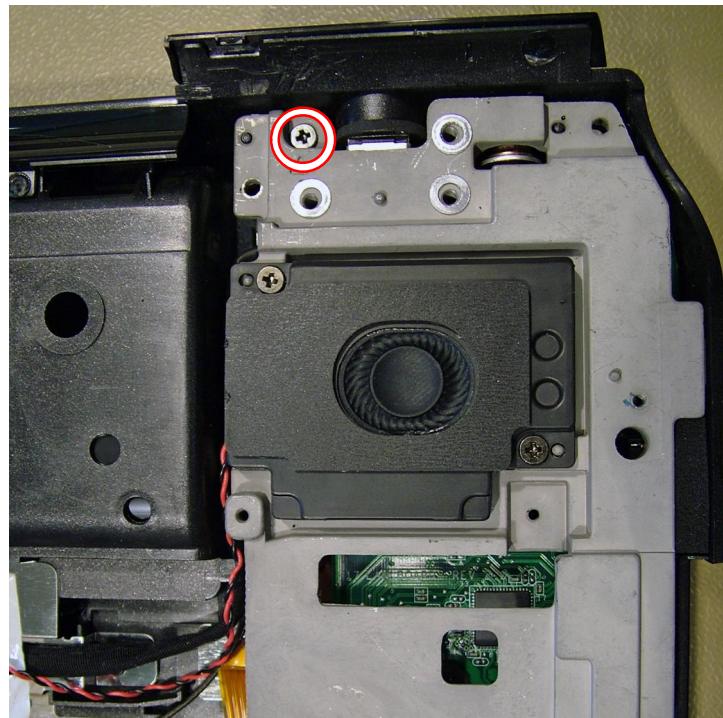
3. Remove the USB/audio board.

## Ethernet/USB Board

To remove the Ethernet/USB board, first remove the LCD assembly (see [LCD Assembly](#) on page 13), and then perform the following steps:

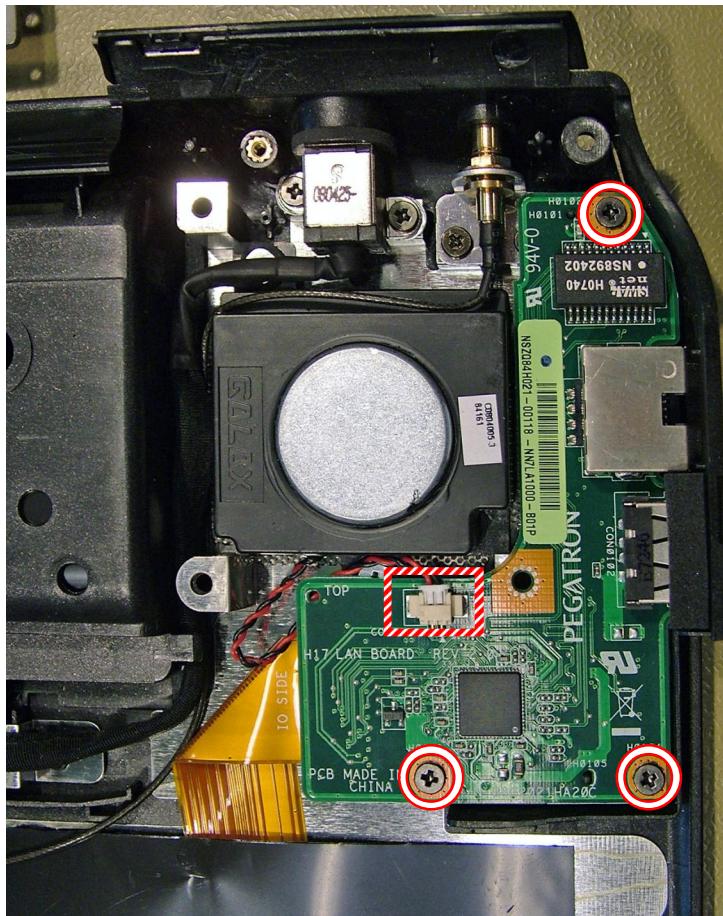
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1. Remove the screw securing the bracket that holds the right speaker and take out the bracket.



*Fig. 35 Location of right speaker bracket screw.*

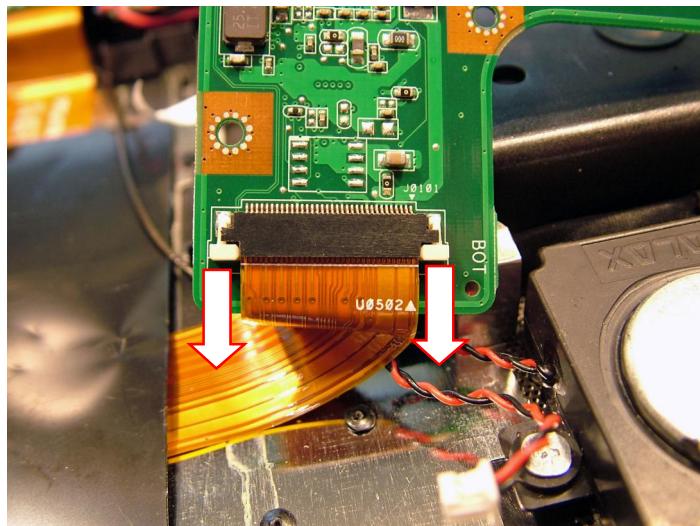
2. Remove the subwoofer cable from the Ethernet/USB board.



*Fig. 36 Location of screws securing Ethernet/USB board.*

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3. Remove the three screws securing the Ethernet/USB board (see Fig. 36 on page 21).
4. Carefully tilt the Ethernet/USB board from the back.
5. Before removing the board entirely, carefully release the white clip securing the Ethernet/USB board flat cable and remove the cable from the board.



*Fig. 37 Releasing Ethernet/USB board flat cable.*

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**Note:** During re-assembly, ensure that you guide the cables properly in the casing, particularly near the optical drive bay. Otherwise, you may not be able to insert the optical disk drive entirely.

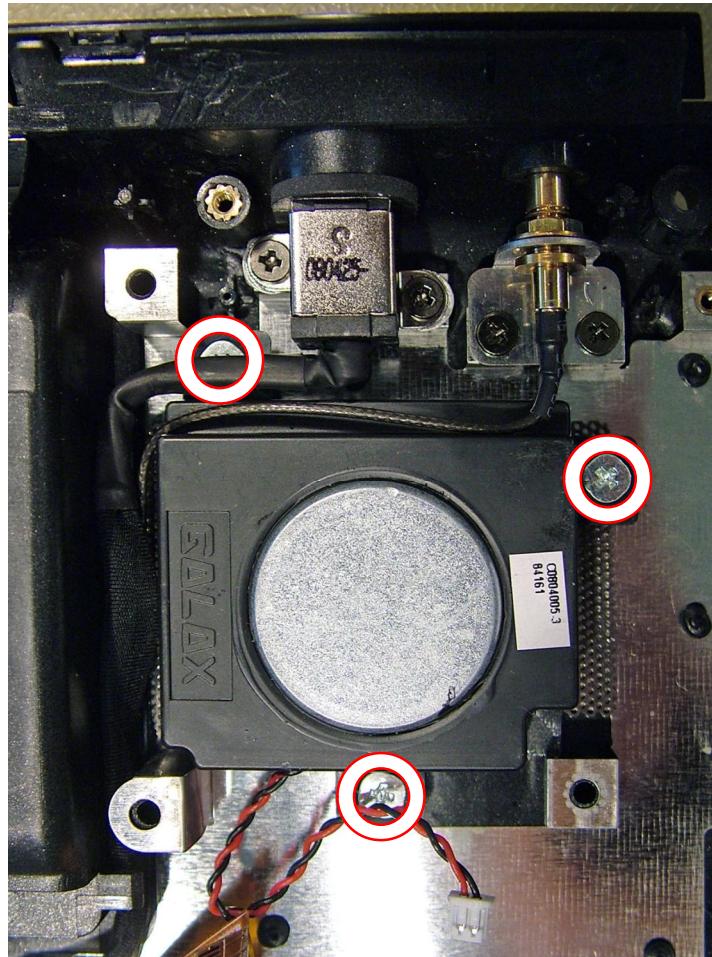
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## **Subwoofer**

To remove the subwoofer, first remove the Ethernet/USB board (see [Ethernet/USB Board](#) on page 20), and then do the following:

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1. Remove the three screws securing the subwoofer.



*Fig. 38 Location subwoofer screws.*

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**Note:** On [Fig. 38](#), one of the screws is partly covered by the DC jack cable.

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2. Take out the subwoofer.

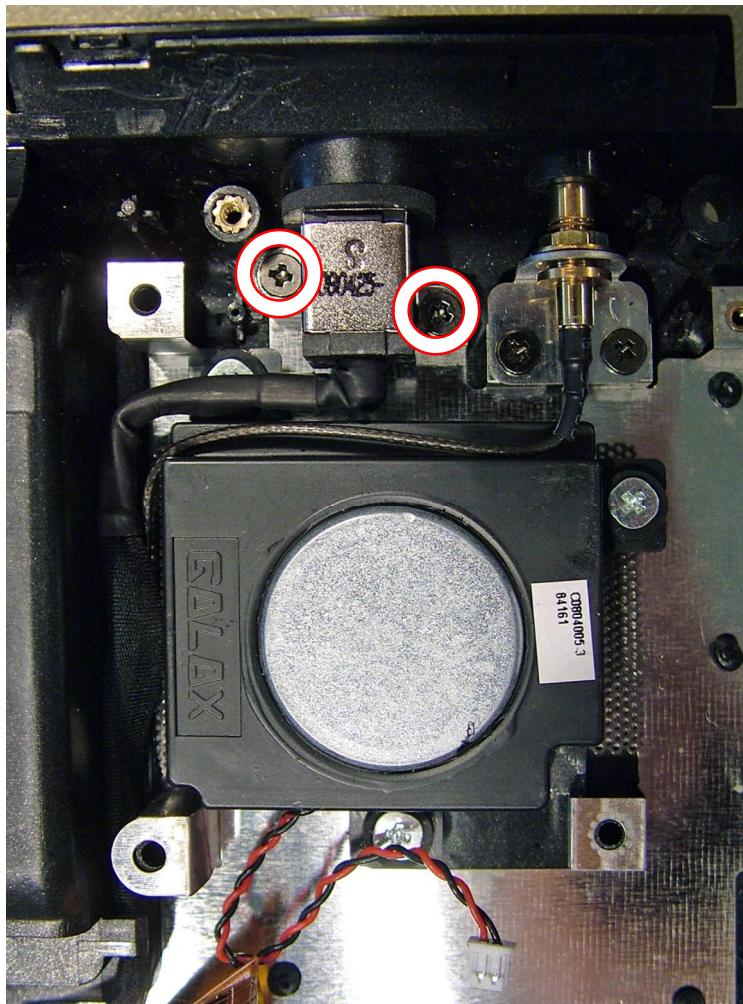
## DC Jack

To remove the DC jack, first remove the Ethernet/USB board (see [Ethernet/USB Board](#) on page 20), and then perform the following steps:

1. Disconnect the DC jack cable from the header on the main board (see [Fig. 27](#) on page 16).

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2. Remove the two screws securing the DC jack.



*Fig. 39 Disconnecting DC jack.*

3. Take out the DC jack.

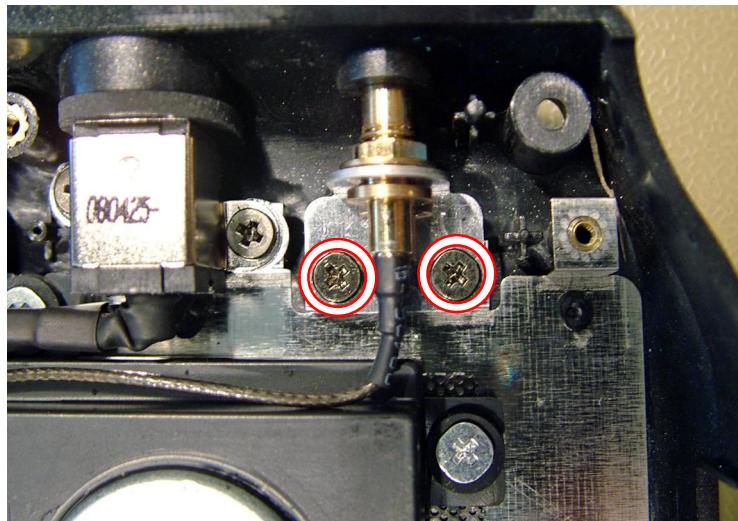
### **TV Antenna (Optional)**

To remove the optional TV antenna cable, first remove the Ethernet/USB board (see [Ethernet/USB Board](#) on page 20), and then perform the following steps:

1. Carefully disconnect the TV antenna cable (see [Fig. 7](#) on page 7).

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2. Remove the two screws securing the TV antenna connector.



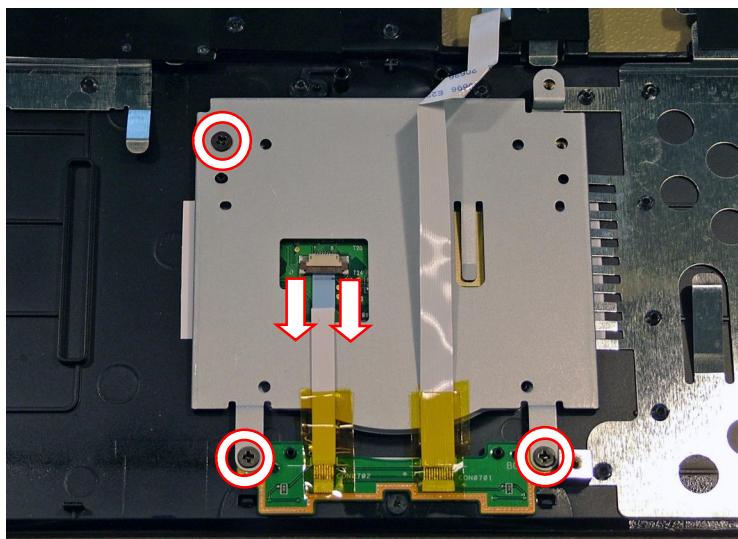
*Fig. 40 Location of TV antenna connector.*

3. Clear the cable and take out the TV antenna.

## Touchpad

To remove the touchpad module, first remove the top cover (see [Top Cover](#) on page 11), and then do the following:

1. Carefully release the white clip securing the touchpad flat cable and disconnect the cable from the header on the top cover.



*Fig. 41 Location touchpad cable and screws.*

2. Remove the three screws securing the touchpad bracket to the top cover (see [Fig. 41](#) on page 25).
3. Remove the touchpad module.

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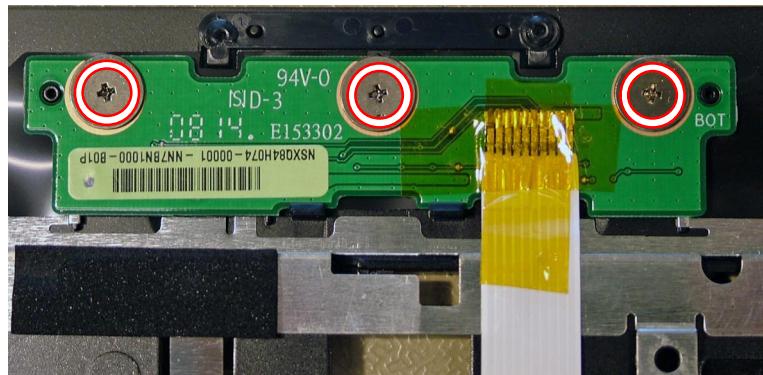
**Note:** The described procedure applies only to the touchpad buttons; the touchpad surface is part of the top cover.

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## Button Board

To remove the button board, first remove the top cover (see [Top Cover](#) on page 11), and then perform the following steps:

1. Remove the three screws securing the button board.



*Fig. 42 Location of button board screws.*

2. Remove the button board.

## LCD Bezel

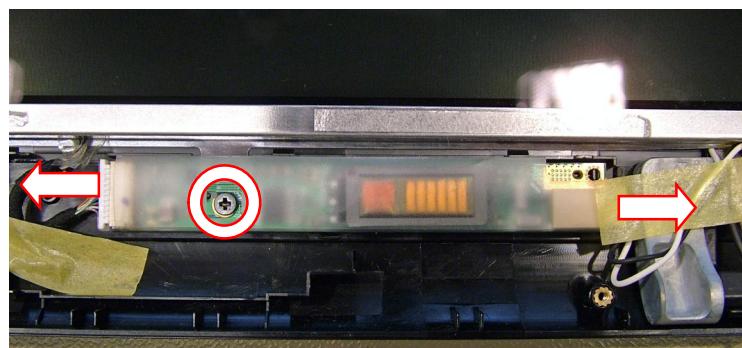
To remove the LCD bezel, first remove the LCD assembly (see [LCD Assembly](#) on page 13), and then perform the following steps:

1. Remove the eight screw covers on the LCD bezel (four at the top and four at the bottom).
2. Remove the screws that became accessible after removing the covers.
3. Carefully pry open the LCD bezel; it has been clicked into place.

## Inverter Board

To remove the inverter board, first remove the LCD bezel (see [LCD Bezel](#) on page 26), and then do the following:

1. Disconnect the cable on both ends of the inverter board.



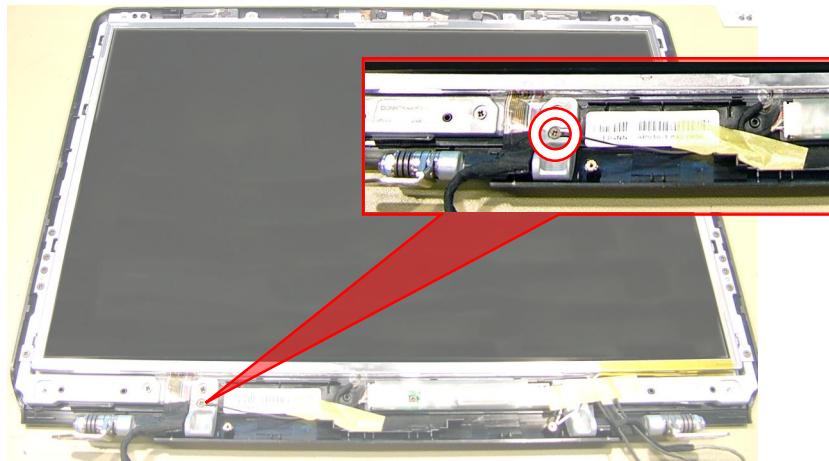
*Fig. 43 Location of inverter board.*

2. Remove the screw securing the inverter board (see [Fig. 43](#) on page 26).
3. Extract the inverter board.

## LCD Panel

To disassembly the LCD panel, first remove the LCD assembly (see [LCD Assembly](#) on page 13), remove the LCD bezel (see [LCD Bezel](#) on page 26), and then perform the following steps:

1. Remove the screw to release the grounding cable.



*Fig. 44 Location of grounding screw.*

2. Remove the two screws securing the top bracket and remove the bracket.

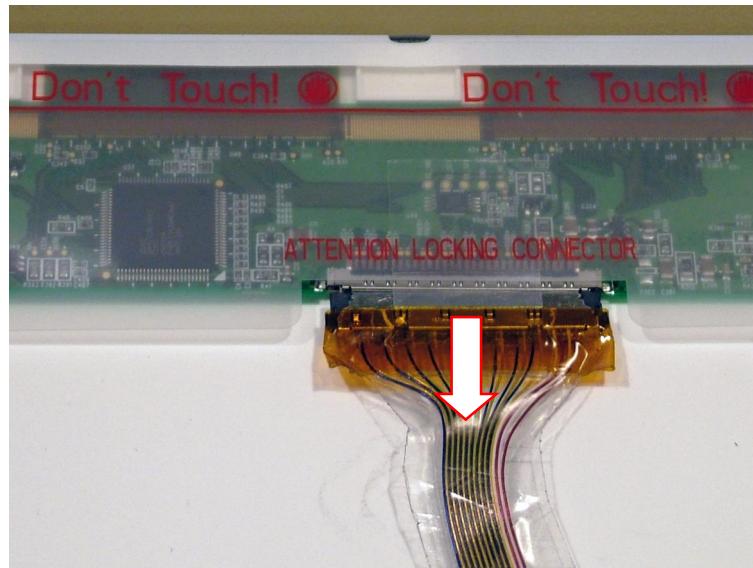


*Fig. 45 Location of bracket screws.*

3. Remove the ten screws securing the side brackets (five screws on each side) and remove the brackets (see [Fig. 45](#) on page 27).
4. Separate the LCD panel from the back cover.

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5. Disconnect the LCD cable.



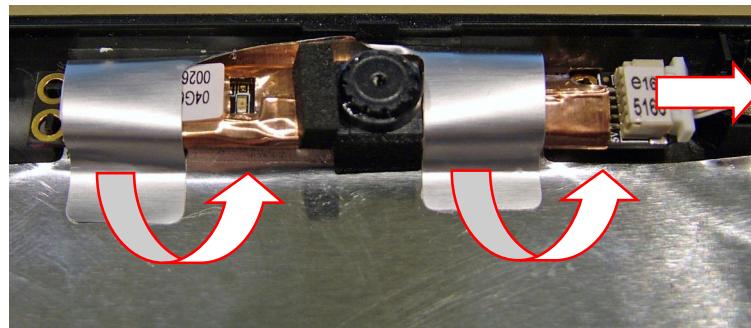
*Fig. 46 Location of LCD cable connector.*

6. Remove the side brackets (four screws on each side).

## Webcam/Microphone

To remove the webcam and microphone, first remove the LCD panel (see [LCD Panel](#) on page 27), and then do the following:

1. Disconnect the cable from the header on the module.



*Fig. 47 Location of webcam connector.*

2. Carefully remove any adhesive tape securing the module (see [Fig. 47](#) on page 28).
3. Extract the webcam/microphone module.

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